CLAIMS:

1. A servo system for generating a normalized digital actuator-signal from a first and control signal (P) and a second control signal (Q), said servo system comprising a sigma delta modulator for generating a digital representation of a quotient $(P - Q)/(P + Q)$ between a difference $(P - Q)$ and a sum of the two control signals $(P + Q)$, characterized in that the sigma-delta-modulator is an analog sigma-delta-modulator (M) having an analog low-pass filter (F), a quantizer (E) arranged for receiving an output signal of the analog low-pass filter, a multiplying DA-converter (W) for converting and multiplying an output signal of the quantizer by the sum $(P + Q)$ of the first and second control signals and means for supplying the difference $(P - Q)$ of the first and second control signals and the output signal of the multiplying DA-converter (W) to an input of the analog low-pass filter (F).

2. A servo system as claimed in claim 1, characterized by a 1 bit quantizer (E) and in that the multiplying DA-converter (W) comprises a current source (i_{p+q}) for supplying the sum of the first and second control signals and switch means (W_1, W_2) controlled by the output signals of the quantizer for switching said current source to the input of the low-pass filter (F).

3. A servo system as claimed in claim 2, characterized in that the analog low-pass filter (F) is a differential analog low-pass filter having a first and a second input terminal to which the first and second control signals (i_p, i_q) respectively are applied.

4. A servo system as claimed in claim 3, characterized by a common mode control circuit (C_m) for stabilizing the common mode voltage at the input of the differential analog low-pass filter (F).

5. A servo system as claimed in claim 4, characterized in that the common mode control circuit is an operational transconductance amplifier ($T_7 \ldots T_{10}$) having an input for receiving a mean voltage of the two input terminals of the analog low-pass filter and a

reference voltage (V_R) and whose output constitutes said current source (i_{p+q}) for supplying the sum of the first and second control signals.

6. A servo system as claimed in claim 2, characterized in that the analog low-pass filter comprises a first and a second single-ended integrator (G_1, G_2) for integrating the first and second control signals respectively, and an operational transconductance amplifier (O_3) having an input for receiving the mean voltage of the two output terminals of the analog low-pass filter (G_1, G_2) and a reference voltage (V_{R2}) and whose output constitutes said current source (i_{p+q}) for supplying the sum of the first and second control signals.

7. An apparatus comprising a servo system, characterized in that the servo system is a servo system as claimed in any of the claims 1 to 6.

8. A sigma delta modulator for generating a digital representation of a quotient $(P - Q)/(P + Q)$ between a difference $(P - Q)$ and a sum $(P + Q)$ of a first control (P) and a second control signal (Q) signal, characterized in that the sigma-delta-modulator is an analog sigma-delta-modulator (M) having an analog low-pass filter (F), a quantizer (E) receiving an output signal of the analog low-pass filter, a multiplying DA-converter (W) for converting and multiplying an output signal of the quantizer with the sum $(P + Q)$ of the first and second control signals and means for supplying the difference $(P - Q)$ of the first and second control signals and the output of the multiplying DA-converter (W) to an input of the analog low-pass filter (F).

9. A sigma delta modulator as claimed in claim 8, characterized in that the quantizer (E) is a 1 bit quantizer (E) and in that the multiplying DA-converter (W) comprises a current source (i_{p+q}) for supplying the sum of the first and second control signals and switch means (W_1, W_2) controlled by the output signal of the quantizer for switching said current source to the input of the low-pass filter (F).

10. A sigma delta modulator as claimed in claim 9, characterized in that the analog low-pass filter (F) is a differential analog low-pass filter with a first and a second input terminal to which the first and second control signals (i_p, i_q) respectively are applied.

11. A sigma delta modulator as claimed in claim 10, characterized by a common mode control circuit (C_m) for stabilizing the common mode voltage at the input of the differential analog low-pass filter (F).

12. A sigma delta modulator as claimed in claim 11, characterized in that the common mode control circuit is an operational transconductance amplifier ($T_7 \ldots T_{10}$) having an input for receiving a mean voltage provided at the first and second input terminals of the analog low-pass filter and a reference voltage (V_R) and whose output constitutes said current source (i_{p+q}) for supplying the sum of the first and second control signals.

13. A sigma delta modulator as claimed in claim 9, characterized in that the analog low-pass filter comprises a first and a second single-ended integrator (G_1, G_2) for integrating the first and second control signals respectively and an operational transconductance amplifier (O_3) having an input for receiving the mean voltage of the two output terminals of the analog low-pass filter (G_1, G_2) and a reference voltage (V_{R2}) and whose output constitutes said current source (i_{p+q}) for supplying the sum of the first and second control signals.

14. An integrated circuit comprising a sigma delta modulator as claimed in any of the claims 8 to 13.